REMARKS/ARGUMENTS

Applicant respectfully requests reconsideration and allowance of the subject application.

Claims 1-34 were originally presented.

Claims 35-41 were previously added.

Claims 1, 4-9, 12-14, 16-24, 26-28, and 35-41 were previously amended.

Claims 14, 15, and 16 are currently amended.

Claims 2-3, 10-11, 23, 25, and 29-34 are canceled without prejudice.

Claims 1, 4-9, 12-24, 26-28, and 35-41 remain in this application.

35 U.S.C. §112

Claims 14 and 23 are rejected under 35 U.S.C. §112 as being indefinite. Claim 14 recites the limitation "the digital signal" and the Action states that there is insufficient antecedent limitation in the claim.

Claim 14, along with claim 15 which depends on claim 14, have been amended to recite "the digital audio signal" which is recited in the preamble of claim 14. Applicant respectfully requests that the §112 rejection of claim 14 be withdrawn.

Claim 23 has been canceled without prejudice.

35 U.S.C. §101

Claims 16-17, 24, and 26-28 are rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. Applicant respectfully traverses the rejection.

The Action rejects claims 16-17 arguing that

"a method for imposing a covert message into a watermark by generating multiple watermarks, assigning each watermark to discrete value of the covert message, and selecting a watermark that corresponds to a discrete value of the covert message, and encoding the watermark into a digital signal" does not produce a useful, concrete, and tangible result. State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. MPEP 2106.

Independent claim 16 recites: "A method for imposing a covert message into a watermark, the method comprising:

generating multiple watermarks;

assigning each of the multiple watermarks to each of possible discrete values for at least a portion of the covert message;

selecting a watermark that corresponds to an actual discrete value of at least a specific portion of the covert message;

without encoding any portion of the covert message itself into a digital signal, encoding the selected watermark into the digital signal.

The result is that a covert message is imposed into a watermark, without encoding any portion the covert message into the digital signal. In other words, a portion or portions of the covert message is assigned to multiple watermarks, and watermarks are selected that correspond to a portion or portions of the covert message. The selected watermarks are then encoded into the digital signal.

Dependent claim 17 depends on claim 16 and benefits from the same arguments presented in support of claim 16. Applicant respectfully requests that the §101 rejection of claims 16 and 17 be withdrawn.

The Action rejects claims 24 and 26-28 arguing that "the claimed invention is directed to a marked signal embodied on a computer-readable medium. The

marked signal does not recite any functional element, therefore the claim is directed solely to non-functional descriptive material".

Independent claim 24 recites in part, in the preamble, "A marked signal embodied on a computer-readable medium, the marked signal having an encoded data channel therein, wherein such encoded data channel has a covert data channel imposed therein, the marked signal generated in accordance with the following acts:"

Claim 24 is directed to how the marked signal is generated as recited in the preamble. The marked signal is the "useful, concrete, and tangible result" that is produced by the elements recited in claim 24.

Dependent claims 26-28 depend on claim 24 and benefits from the same arguments presented in support of claim 24. Applicant respectfully requests that the §101 rejection of claims 24 and 26-28 be withdrawn.

Specification

The Action states that "[t]he abstract of the disclosure is objected to because the language of the abstract should avoid using phrases that implies the disclosure describes. Correction is required".

A new "abstract" is provided in this response. Applicant respectfully requests that the objection as to the "abstract" be withdrawn.

35 U.S.C. §103

Claims 1, 4-9, 12-15, 18-24, 26-28, and 35-41 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,614,914 to Rhoads et al (Rhoads)

in view of U.S. Patent 6,449,378 to Yoshida et al (Yoshida). Applicant respectfully traverses the rejection.

Rhoads teaches a watermark system that includes an embedder, detector, and reader. The watermarking embedder encodes a watermark signal with a host signal to create a combined signal or watermarked signal. The detector looks for the watermark signal in a potentially corrupted version of the combined (watermarked) signal, and computes the watermark's orientation. A reader extracts a message in the watermark signal from the combined signal using the orientation to approximate the original state of the combined (watermarked) signal. (Abstract of Rhoads). A watermark can be viewed as an information signal that is embedded in a host signal, such as an image, audio, or some other media content. (Rhoads, col. 4. lines 52-54). The watermark may be comprised of one or more signal components. Each watermark component may perform one or more functions. Two primary functions include acting as an identifier to facilitate detection and acting as an information carrier to convey a message. (Rhoads, col. 4 line 65 to col. line 3).

Fig. 1 of Rhoads shows signal processing operations involved in embedding and reading the watermark signal. In embedding the watermark signal, there are three primary inputs to the embedding process: the original, digitized signal 100, the message 102, and a series of control parameters 104. (Rhoads, col. 6 lines 60-64). The watermark embedding process 106 converts the message to a watermark information signal. The watermark information signal is combined with the input signal and possibly another signal (e.g., an orientation pattern) to create a watermarked signal 108.

Independent claim 1, for example, recites "A method for concealing data within a digital signal, the method comprising:

receiving a first data pattern of discrete values which are bits of a watermark and a second data pattern of discrete values which are bits of a covert message;

imposing a discrete value of the second data pattern over one or more discrete values of the first data pattern to generate a third data pattern, wherein the imposing is carried out by performing a Boolean operation with a discrete value of the second data pattern and multiple discrete values of the first data pattern;

processing the digital data signal into a series of bitframes, wherein each bitframe includes a set of frames, and wherein each frame includes a set of blocks; and

encoding the third data pattern into the digital signal, wherein a different bit of the watermark is encoded in each frame of at least one subject bitframe, and wherein a same bit of the covert message is encoded in each frame of the subject bitframe.

The combination of Rhoads and Yoshida fails to teach or suggest the method of claim 1. Rhoads teaches an input signal 100 (a digital signal). The Action argues that Rhoads teaches that the message 102 are "bits of watermark" that make up a first data pattern and "bits of a carrier or raw bit or control parameter" 104 "that meets the recitation of covert message". The Action further argues that Rhoads teaches "imposing a discrete value of the second data pattern over one or more discrete values of the first data pattern to generate a third data pattern" which the Action argues is the watermarked signal 108 "and encoding a

(the) third data pattern (i.e., the watermarked signal 108) into the digital signal (i.e., the input signal 100)".

Claim 1 particularly recites "encoding the third data pattern into the digital signal". The Action argues that this element is taught in Rhoads at column 7, line 17 through column 8, line 30; column 9, line 60 through column 10, line 18; column 11, lines 7-32; column 3, lines 4-20; and figures 1 and 2. The Action argues that the watermarked signal 108 is a "third data pattern"; however, there is nothing in the cited sections of Rhoads or anywhere in Rhoads that teaches that the watermarked signal 108 (i.e., "third data pattern") is encoded into the digital signal (i.e., input signal 100) as recited in claim 1. That would require the watermarked signal 108 to be inputted back into the watermark embedding process 106. This is not taught or suggested in Rhoads.

Yoshida is cited as teaching "method and apparatus of embedding watermark information in a moving image constituted by a plurality of frames wherein one bit of the watermark information may be embedded one by one in each frame"; however, Yoshida provides no assistance in light of Rhoads as to the recited method of claim 1.

In view of the above, Rhoads in view of Yoshida does not teach or suggest each and every element of claim 1. Thus, claim 1 is not obvious over the cited combination. Applicant respectfully requests that the §103 rejection of claim 1 be withdrawn.

Dependent claims 4-7 are allowable at least by virtue of their dependency on base claim 1. Applicant respectfully requests that the §103 rejection of claims 4-7 be withdrawn.

Independent claims 9, 14, 18, 19, 20, 21, 22, 24, and 35 are rejected in the Action based on similar arguments as presented in claim 1. Applicant presents the arguments presented in claim 1 in support of claims 9, 14, 18, 19, 20, 21, 22, 24, and 35. Rhoads in view of Yoshida does not teach or suggest each and every element of claims 9, 14, 18, 19, 20, 21, 22, 24, and 35. Thus, claims 9, 14, 18, 19, 20, 21, 22, 24, and 35are not obvious over the cited combination. Applicant respectfully requests that the §103 rejection of claims 9, 14, 18, 19, 20, 21, 22, 24, and 35 be withdrawn.

Dependent claim 8 is allowable at least by virtue of its dependency on base claim 18. Applicant respectfully requests that the §103 rejection of claim 8 be withdrawn.

Dependent claim 12 is allowable at least by virtue of its dependency on base claim 9. Applicant respectfully requests that the §103 rejection of claim 12 be withdrawn.

Dependent claim 13 is allowable at least by virtue of its dependency on base claim 19. Applicant respectfully requests that the §103 rejection of claim 13 be withdrawn.

Dependent claim 15 is allowable at least by virtue of its dependency on base claim 14. Applicant respectfully requests that the §103 rejection of claim 14 be withdrawn.

Dependent claims 26-28 are allowable at least by virtue of their dependency on base claim 24. Applicant respectfully requests that the §103 rejection of claim 26-28 be withdrawn.

Dependent claims 36-41 are allowable at least by virtue of their dependency on base claim 35. Applicant respectfully requests that the §103 rejection of claim 36-41 be withdrawn.

Claims 16 and 17 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,614,914 to Rhoads et al (Rhoads 914) in view of U.S. Patent 5,745,604 to Rhoads (Rhoads 604). Applicant respectfully traverses the rejection.

Independent claim 16 recites "A method for imposing a covert message into a watermark, the method comprising:

generating multiple watermarks;

assigning each of the multiple watermarks to each of [[the]] possible discrete values for at least a portion of the covert message;

selecting a watermark that corresponds to an actual discrete value of at least a specific portion of the covert message;

without encoding any portion of the covert message itself into a digital signal, encoding the selected watermark into the digital signal.

The combination of Rhoads 914 and Rhoads 604 fails to teach or suggest the method of claim 16. As discussed above, The Action argues that "bits of a carrier or raw bit or control parameter" 104 "that meets the recitation of covert message". The Action argues that the element "assigning each of the multiple watermarks to each of the possible discrete values for at least a portion of the covert message" is taught by Rhoads 914 at column 9, line 35 through column 10, line 28; column 10, line 28 through column 11, line 38; and column 6, line 50 through column 8. The cited sections and Rhoads 914 in general do not teach or

suggest this element. As discussed above, the embedder taught by Rhoads merely receives and combines an input signal, watermark message, and control or raw bits. There is no specific teaching that the control or raw bits (i.e., "covert message" argued by the Action), or values of the control or raw bits, are assigned to the watermarks as particularly recited by claim 16.

The Action further argues that cited sections above that teach the element of "assigning ..." also teach the element "selecting a watermark corresponding to an actual discrete value of a specific portion of a covert message"; however, there is no such teaching or suggestion. As discussed, the control or raw bits (i.e., values of the bits) taught in Rhoads are not assigned to multiple watermarks, therefore there cannot be a selecting a watermark that corresponds to a portion of the covert message (i.e., control or raw bits) as recited in claim 16.

Rhoads 604 is cited as teaching "generating multiple watermarks wherein the size of covert message with N bits long resulting into 2^N multiple watermarks"; however, Rhoads 604 provides no assistance in light of Rhoads 914 as to the recited method of claim 16.
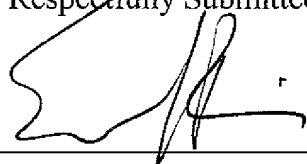
In view of the above, Rhoads 914 in view of Rhoads 604 does not teach or suggest each and every element of claim 16. Thus, claim 16 is not obvious over the cited combination. Applicant respectfully requests that the §103 rejection of claim 16 be withdrawn.

Dependent claim 17 is allowable at least by virtue of its dependency on base claim 16. Applicant respectfully requests that the §103 rejection of claim 17 be withdrawn.

CONCLUSION

All pending claims 1, 4-9, 12-24, 26-28, and 35-41 are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the subject application. If any issues remain that prevent issuance of this application, the Examiner is urged to contact the undersigned attorney before issuing a subsequent Action.

Respectfully Submitted,

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